

# BISSO ILLEGAL DISPOSAL SITE SONOMA COUNTY

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## SITE INVESTIGATION WORK PLAN

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Remediation, Closure and Technical Services  
Closed Illegal and Abandoned Sites

November 1, 2001

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# Introduction

The California Integrated Waste Management Board (CIWMB) Closed, Illegal and Abandoned Site (CIA) program investigates solid waste disposal sites and provides site data and documentation to determine if the site poses a threat to human health and safety or the environment. Depending on the types of waste at the site, intrusive investigation and environmental sampling may be necessary to quantify potential remediation of the site or regulatory enforcement. Statutory authority for investigating solid waste disposal sites is derived from the California Public Resources Code (PRC), Section 45013, et seq.

## Site Location and Description

The Bisso Brothers Ranch, aka, Bisso Illegal Disposal Site, 25800 Arnold Dr., Sonoma County, is located at the southern end of Sonoma Valley, north of Sears Point and highway 37, and east of highway 121. This is a low-lying area bounded by the Sonoma Creek on the east, and highway 121 on the west (Figures 1 & 2). The entire site appears to be diked agricultural wetland. The area has a high seasonal groundwater table, and a levee separating it from the creek. A number of shallow sloughs meander through the site, which also contains several small ponds or pools of water. The property is currently owned by Western Gravel Company and is described as Assessor Parcel Numbers (APN) 128-491-12, 22, 23.

The Bisso Illegal Disposal Site consists of approximately 850-acres, of which illegally disposed of material appears to be concentrated across a 50-acre portion of the site. The volume of the waste has been estimated to be approximately 150,000 cubic yards. Much of the material appears to have been at the site for some time, as evidence by decay and vegetative growth. The owners of the ranch have continued to use the property as a disposal site in spite of the lack of permits and years of litigation with the County of Sonoma. Unauthorized dredging also has occurred at this site for many years.

## Project Background

The following is a chronological enforcement history of the Bisso Illegal Disposal Site:

**October 9, 1985** – Sonoma County Public Health Department conducts an inspection of the Bisso Brothers Ranch after receiving complaints of the operation of an illegal solid waste facility.

**October 28, 1985** – Sonoma County Public Health Department issues a letter to the Bisso Brothers indicating that the operation of a solid waste facility without a permit is prohibited. The Bisso Brothers are given official notice to remove all the accumulated refuse from the site and place the waste into a permitted disposal facility prior to December 2, 1985.

**1986** – Sonoma County Court grants a preliminary injunction against Bill and Jack Bisso, giving notice to discontinue operating the solid waste facility at 25800 Arnold Dr., in Sonoma County. Sonoma County Court later entered an order against Bill and Jack Bisso for contempt of court for the violation of the preliminary injunction.

**January 30, 1992** – County of Sonoma seeks injunctive and other relief to abate certain violations of zoning and other land-use codes and regulations applicable to defendants' real property. Bill Bisso denies that the County of Sonoma is entitled to such relief and asserts various defenses.

**December 17, 1992** – The Sonoma County Court makes judgment on the injunctive action sought by the County of Sonoma and finds the Bisso Brothers guilty of operating or maintaining a solid waste disposal site without a permit issued by the county.

**March 9, 1993** – Inspection Warrant issued by Sonoma County Municipal Court to inspect the Bisso Brothers Ranch, located at 25800 Arnold Drive, Sonoma, California.

**March 11, 1993** – Multi-agency inspection of the Bisso Brothers Ranch conducted by the California Integrated Waste Management Board (CIWMB), California Regional Water Quality Control Board – San Francisco Bay Region (RWQCB), California Air Quality Resources Board (CARB), Bay Area Air Quality Management District (BAAQMD) and the Sonoma County Health Department (LEA). The Sonoma County District Attorney inspector, Sonoma County sheriff and Mr. Jack Bisso were also present.

**January 4, 1994** – Sonoma County District Attorney office issues a letter to the California Environmental Protection Agency stating that there is insufficient evidence to sustain a criminal enforcement action based on alleged disposal of asbestos and/or water quality violations.

**April 17, 1995** – Bill and Jack Bisso found in contempt of Court for failure to comply with May 7, 1993 amended Court Judgment to “Cease and desist the maintenance and operation of a Solid Waste Disposal facility and remove all solid waste by July 7, 1993.”

**May 1, 1995** – The Bisso Brothers filed separate bankruptcy forms, seeking protection under Chapter 12 for farmers.

**July 3, 1995** – Bill and Jack Bisso jailed for 91 days for failure to comply with April 17, 1995, Order and Judgment of contempt.

**September 15, 1995** – A fire reduces to ash a significant amount of debris at the Bisso Illegal Disposal Site. The amount of debris that burned was estimated to be 1,000 feet long, 150 feet wide and up to 10 feet deep.

**December 1, 1999** – Trial on the ownership of the Arnold Drive property was held before Judge Lloyd von der Mehden. Bill Bisso, aka William Bisso and Jack Bisso (Defendants) vs. Western Gravel Company (Plaintiff).

**June 9, 2000** – Court issues “Tentative Decision” on ownership of Bisso Brothers Ranch. The “Tentative Decision” was in favor of Western Gravel Company.

**July 18, 2001** – Bill Bisso files appeal contesting the courts decision granting ownership of the Bisso Brothers Ranch to the Western Gravel Company.

## Project Purpose

The objective of Bisso Brothers Illegal Disposal Site Investigation will be to:

- Delineate Waste Footprint, that is, to determine the actual horizontal waste boundaries;
- Determine the Waste Characteristics for disposal, health and safety, and sampling and analysis purposes;
- Determine the Waste Volume, that is, the combined horizontal and vertical extent of the of the waste; and
- Estimate Clean Closure Cost and Remediation Options.

These objectives will be accomplished by conducting an intrusive investigation utilizing trenching and hand sampling methods to obtain samples, which are to be sent to a certified laboratory to be analyzed for contaminants.

## Responsible Agency

The CIWMB will be responsible for preparing the site investigation and sampling plan, coordinating investigation objectives with the LEA and coordinating field investigation and sampling activities with CIWMB contractors. CIWMB staff will oversee field investigation activities, preparation and coordination of the site investigation, sampling and analysis final report and providing the final report to the LEA for further action. CIWMB will also place both the sampling report and site investigation report in Board Files and update the Solid Waste Information System (SWIS) database.

## Project Organization

The site investigation, sampling and analysis plan, report preparation and coordination will be performed by CIWMB CIA Section Staff. CIA staff will also coordinate and oversee field investigation and sampling activities. CIWMB's Health and Safety Section will be responsible for preparing a site-specific health and safety plan and monitor on-site health and safety issues. As lead on the project, Mr. Glenn K. Young, P.E. may be reached at the California Integrated Waste Management Board 1001 "I" Street, P.O. Box 4025, Sacramento, CA 95812-4025 or by calling (916) 341-6696, FAX: (916) 319-7528. CIWMB's AB 2136 Environmental and Civil Engineering Consultant, Bryan A. Stirrat (BAS) and Associates will subcontract for trenching equipment and operator and provide a registered geologist for logging samples for determining the characteristics and depth of the fill material.

BAS will survey sampling locations at the site in accordance with Figures 3, 4 and 5 of this sampling and analysis plan. Surveying, logging and photographing of sampling locations will be performed by CIWMB staff. CIWMB staff will perform sample packaging, labeling and shipping to the CIWMB contracted laboratory. The sampling containers and laboratory analysis for the soil samples will be through CIWMB Contract IWM-C9037 with ExcelChem Environmental Laboratories, Inc. located at Roseville, CA.

## Previous Investigations

On March 11, 1993, a multi-agency task force conducted a soil and water investigation at the Bisso Brothers Ranch. The multi-agency task force had representatives from the California Integrated Waste Management Board (CIWMB), California Regional Water Quality Control Board – San Francisco Bay Region (RWQCB), California Air Quality Resources Board (CARB), Bay Area Quality Management District (BAAQMD) and the Sonoma County Health Department (LEA). Various samples were obtained during this investigation and sent to certified analytical laboratories for chemical analysis.

The laboratory analysis of the various samples revealed quantities of friable asbestos, depressed and elevated pH levels (2.9-12), and elevated levels of metals (Cr, Cu, Ni, Zn and Pb) present in the waste and surface water tested. The analytical results are as follows:

### California Air Resource Board

The following table shows the results of analysis for twelve samples taken from various locations at the Bisso Illegal Disposal Site.

Field Number	Laboratory Results
#1	Sample contains 1-5% Crocidolite Asbestos. Sample also contains wood fibers.
#2	No Asbestos detected (less than one percent by polarized light microscopy and dispersion staining).
#3	No Asbestos detected (less than one percent by polarized light microscopy and dispersion staining). Sample contains paper fibers.
#4	No Asbestos detected (less than one percent by polarized light microscopy and dispersion staining). Sample contains plant fibers.
#5	No Asbestos detected (less than one percent by polarized light microscopy and dispersion staining). Sample contains wood and paper fibers.
#6	No Asbestos detected (less than one percent by polarized light microscopy and dispersion staining). Sample contains fiberglass.
#7	Sample contains 1-5% Chrysotile Asbestos
#8	No Asbestos detected (less than one percent by polarized light microscopy and dispersion staining). Sample contains paper fibers.
#9	No Asbestos detected (less than one percent by polarized light microscopy and dispersion staining).

#10	No Asbestos detected (less than one percent by polarized light microscopy and dispersion staining). Sample contains fiberglass.
#11	No Asbestos detected (less than one percent by polarized light microscopy and dispersion staining). Sample contains fiberglass and paper.
#12	No Asbestos detected (less than one percent by polarized light microscopy and dispersion staining).

### Regional Water Quality Control Board – San Francisco Bay Region

The following table shows the results of analysis for six samples taken from various locations at the Bisso Illegal Disposal Site.

Field Number	PH	Laboratory Results	Location
Br-1 (Water)	3.9	Cr – 16 ppb	Shallow slough 450 ft. east and 100 ft. south of barn.
		Cu – 31 ppb	
		Ni – 280 ppb	
		Zn – 450 ppb	
Br-2 (Water)	4.0	Same as Above	Shallow slough 450 ft. east and 100 ft. south of barn.
Br-3 (Water)	2.9	Cr – 12 ppb	Pond 850 ft. east of barn #1.
		Cu – 300 ppb	
		Ni – 450 ppb	
		Pb – 29 ppb	
		Zn – 750 ppb	
Br-4 (Water)	2.9	Same as Above	Pond 850 ft. east of barn #1.
Br-5 (Sand)	N/A	As – 7.7 mg/kg	Sand pile at south end of above pond.
		Cr – 67 mg/kg	
		Cu – 29 mg/kg	
		Ni – 56 mg/kg	
		Pb – 42 mg/kg	
		Zn – 63 mg/kg	
Br-6 – (Water)	12	As – 4.1 ppb	Pond adjacent to concrete pile #8 a few hundred ft. west of barn #1.
		Cr – 65 ppb	
		Cu – 91 ppb	
		Ni – 52 ppb	
		Zn – 23 ppb	

Assumption: Hardwater =50 mg/L

## Project Objective

### Data Collection

Trenching equipment will be used to conduct the site investigation to determine:

- Horizontal and Vertical Extent of the Waste Area; and
- Chemical and Physical Characterization of the Waste.

Sampling will be conducted under the California Code of Regulations, Title 22, section 66261.10 et seq. for characterizing hazardous waste. The CIWMB will use regulatory limits established from the California Department of

Toxic and Substance Control and federal levels for evaluating the soil/waste. Detailed analytical procedures are specified in the analytical section of this plan. Since a portion of the soil may need to be disposed of to a municipal solid waste landfill under Clean Closure or Clean Closure alternatives, it will be necessary to determine if the soil-waste are considered hazardous for the purpose of handling and disposition.

Chemical constituent concentration data obtained during this investigation will be evaluated to determine if additional sampling is necessary. Additional sampling may be performed if it is found that specific constituent levels exceed hazardous levels specified in 22 CCR, e.g. STLC for Lead is much greater than 5 mg/l.

## Project Tasks

During the investigation of the Bisso Brother's Illegal Disposal Site a sampling location reference grid will be established and tied to an established benchmark at the site. Relocation of planned sampling locations may be performed and the location referenced to the reference grid. Sampling at a location will entail use of trenching equipment, which will excavate selected locations and samples will be taken at various points.

Under the authoritative sampling protocol, the CIWMB field engineer may change individual sampling locations based on site-specific field conditions (including unforeseen obstructions, visible signs of contaminated soils or other factors). CIWMB anticipates that approximately 40 sampling trench locations will be required to adequately define the horizontal and vertical extent of the waste. Soil samples will be screened using a GMI 422 Gas Surveyor instrument and also screened for radioactivity using portable radiation detection equipment and then sent to a State of California certified hazardous waste laboratory for analysis. Trenches will be screened using a GMI 422 Gas Surveyor instrument capable of measuring concentrations of methane (CH<sub>4</sub>), hydrogen sulfide (H<sub>2</sub>S), carbon dioxide (CO<sub>2</sub>), oxygen (O<sub>2</sub>) and carbon monoxide (CO). The sampling holes will be backfilled with spoils and native soils. Sampling activities are scheduled to occur in 2002.

## Expected Data

Based on known data obtain during previous inspects or investigations, the following are expected to be present at this site.

- Asbestos – Asbestos containing material, estimated to be 3000 cubic yards.
- Burn Ash – Elevated Concentrations of Metals (Cr, Cu, Ni, Zn, Pb).
- Construction and Demolition Debris – Concrete, Asphalt, Metal Pipes, Sheet Metal, Rebar, Wires, Insulation, Carpeting, and Plastic.
- Miscellaneous Waste – Farm Equipment, Batteries.
- Scrap Metal – Auto Parts, Metal Storage Tanks, Drums, Cans, Appliances.
- Tires – Estimated to be several thousand.
- Wood Waste – Tree Stumps, Pier Ties, Railroad Ties.
- Abandoned Vehicles – Estimated to be less than one hundred.

## Sampling Plan

This sampling plan is intended to document the procedural and analytical requirements for this and any subsequent sampling events performed to collect soil and waste samples used to characterize areas of potential contamination from

the Bisso Brothers Illegal Disposal Site. This plan was compiled after reviewing the US Environmental Protection Agency's, Region 9, guidance document "Instructions for the One-time Sampling Event Sampling and Analysis Plan" dated March 1998.

## Sampling Methodology

Discrete sampling will be used to assess the waste and surrounding soils. The sampling will be conducted by using trenching equipment to sample locations shown on Figures 4 and 5. Authoritative protocol may be used to allow the investigator the flexibility to move sampling locations, as necessary, to accommodate unforeseen field conditions. The following outline describes the proposed sampling:

- Excavating equipment will trench an area to characterize the waste. Samples will be obtained and capped. A total of 80 waste samples will be collected (two samples per location). One will be used as a discrete sample to be analyzed for California Assessment Metals (CAM 5 - Lead, Nickel, Cadmium, Chrome and Zinc) and Reactivity, Corrosively and Ignitibility (RCI). The other sample will be used for compositing (composed of 5 discrete samples) which will be analyzed for CAM 17 Metals (Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium and Zinc), Total Petroleum Hydrocarbons (TPH-d, TPH-mo), Organochlorine Pesticides (O-pest), Polychlorinated Biphenyls (PCBs), Polycyclic Aromatic Hydrocarbons (PAHs), Dioxins (full scan of 17) and California Waste Extraction Test (WET). A total of 16 composite samples are proposed.
- Each sample will be classified and logged by the BAS registered geologist and samples will be collected by visually identifying debris through the trenching area, sampling and then carefully packaged and capped. Once capped, the samples will be sealed, labeled and logged and packaged for shipping back to CIWMB laboratory contractor, ExcelChem.
- Reusable sampling equipment will be decontaminated between each sampling event by the CIWMB consultant or their subcontractor. Decontamination will follow the procedures outlined in Section (3.5) of this sampling plan. Personnel who collect samples will be required to change their gloves between each sampling event.

## Sampling Equipment

The following equipment will be necessary to perform the sampling

- |  |                              |
|--|------------------------------|
| ■ Trenching equipment (CAT 330)            | ■ Field log book             |
| ■ Sampling containers                      | ■ Survey laths               |
| ■ GMI 422 Gas Surveyor Instrument          | ■ First aid kit and eye wash |
| ■ Tyvek Suit & Gloves (PPE)                | ■ Mailing labels and markers |
| ■ Chain of custody forms and custody seals | ■ Cooler and ice or blue ice |
| ■ Decontamination equipment                | ■ Packing and duct tape      |
| ■ Pocket Thermometer                       |                              |



## Sampling Procedures

Waste and soil samples will be collected using trenching equipment. At each sample location, decontaminated trenching equipment will be used to excavate a trench through the cover and into the waste. Trench samples will be collected by visually identifying and collecting samples into wide-mouth sampling containers. After each sample is collected it will be placed in a laboratory-supplied container, labeled, logged on the chain-of-custody document, screened for radioactivity, sealed, and stored in an ice chest that is cooled to 4 degrees Fahrenheit. The coolers will be shipped to ExcelChem via overnight Federal Express shipment. Upon completion of sampling at a location the trench will be screened using a GMI 422 Gas Surveyor and a measurement taken for CH<sub>4</sub>, CO<sub>2</sub>, H<sub>2</sub>S, CO and O<sub>2</sub>. Trench spoils will also be screened for radiological hazards using hand-held radiation detection equipment. The hole will then be filled with trench spoils and native soil.

## Sample Locations

Although sampling locations are proposed in Figures 4 and 5, exact soil sampling locations will be determined in the field based on accessibility, the presence of unforeseen impedances or other factors. Final soil sample locations will be recorded in the field logbook and staked in the field when sampling is completed. A survey crew will locate each sampling location on the final site map. The map will be provided in a final site investigation and sampling and analysis report.

## Decontamination Procedures

All equipment that comes into contact with potentially contaminated soil/waste will be decontaminated in a predestinated area. Disposable equipment intended for one-time use will not be decontaminated, but will be packaged for appropriate disposal. Decontamination will occur prior to and after each use of a piece of equipment. All sampling devices used, including trenching equipment, will be decontaminated by CIWMB staff. See Site Safety Plan for specific decontamination procedures.

## Sample Containers and Preservation

Pre-cleaned containers will be supplied by the laboratory and will not be rinsed prior to sample collection. No preservative will be added to the containers.

## Disposal of Residual Materials

In the process of collecting environmental samples at the Bisso Brother's Illegal Disposal Site, the CIWMB sampling team will generate different types of potentially contaminated investigation-derived waste (IDW) that may include:

- Used personal protective equipment (PPE)
- Disposable sampling equipment
- Decontamination fluids

The U.S. EPA's National Contingency Plan requires management of IDW generated during sampling comply with all applicable or relevant and appropriate requirements to the extent practicable. The IDW will contain minor residual amount of the soil/waste. These wastes are considered incidental hazardous material and will be disposed of at a municipal landfill. Used PPE and disposable equipment will be double bagged and placed in municipal refuse dumpster. Any PPE and disposable equipment that is to be disposed of which can still be used will be rendered inoperable before disposal. Decontamination fluids that will be generated during sampling will consist of nitric acid, deionized water, residual contaminants, and water with non-phosphate detergent. The volume and concentration of the decontamination

fluid will be sufficiently low to allow disposal at the site or sampling area. This minimal volume of decontamination fluid will be disposed of to the sanitary sewer system.

If hazardous or radioactive material are found during sampling screening activities, appropriate level of notification and response procedures will be implemented in accordance with the Site Specific Health and Safety Plan.

## Analytes of Concern

Since the Bisso Brothers Ranch is an illegal disposal site, general investigation analytes of concern will be checked, and authoritative sampling and analysis may be performed on visually identified materials. General investigation analytes for soil and waste will include CAM 17 metals, TPH, PAHs, Dioxins, O-pest, PCBs, VOC's, and tests for Reactivity, Corrosively, and Ignitability. Discrete Samples will be analyzed for CAM 5 Metals and Reactivity, Corrosively and Ignitability. Composite samples will be analyzed for CAM 17, O-pest, PCBs, TPH, PAHs, WET and Dioxins. For Gas, T.O.-15 analysis will be utilized which can detect both fixed gases (CH<sub>4</sub>, CO<sub>2</sub>, O<sub>2</sub>, & N<sub>2</sub>) and Trace Organics (Tetrachloroethylene, Perchloroethylene, Benzene, Toluene, Ethylbenzene, Xylene and Vinyl Chloride).

## Analytical Procedures

Each sample container's headspace will be tested using the GMI 422 Gas Surveyor. After field screening the sample containers will be capped, sealed and labeled (see packaging procedures), and sent to CIWMB's contract laboratory, ExcelChem, where discrete samples will be analyzed for CAM 5 metals and RCI. Composite samples will be analyzed for CAM 17, TPH, O-pest, PCBs, Dioxins, PAHs and WET [to determine if Soluble Threshold Limit Concentration (STLC) is exceeded]. If STLC limits are exceeded for any metal by 10 times the STLC regulatory level, a separate WET analysis for that metal will be performed.

## Anticipated Cost

Based on discussions with ExcelChem Analytical Laboratory the following sampling costs are presented:

EPA METHOD	PARAMETER	UNIT COST	# SAMPLES	COST
6010	California Assessment Metals (CAM 5 Metals)	\$60	40	\$2400
6010/7417	CAM 17 Metals	\$180	16	\$2880
22CCR WET	Soluble Threshold Limit Concentration (STLC Extract) (>10X)	\$60	16	\$960
608/8080	Organochlorine Pesticides/ Polychlorinated Biphenyls (O-pest/PCBs)	\$200	16	\$3200
602/8020/8015m	TPH as Oil/ TPH as Diesel TPH/BTEX/d	\$100	16	\$1600
8270c	Semi-Volatiles/ Polycyclic Aromatic Hydrocarbons (PAH's)	\$300	16	\$4800

1613a	Dioxins (Full scan of 17)	\$960	16	\$15360
	Reactivity, Corrosively, Ignitibility (RCI)	\$125	40	\$5000
<b>TOTAL</b>				<b>\$36200</b>

## Field Quality Control

One field duplicate sample will be collected simultaneously with a standard sample from the same source under identical conditions and placed into a separate sample container. The duplicated sample is treated independently of its counterpart in order to assess laboratory performance through comparison of the results.

The duplicate samples will be collected at a random location that demonstrates elevated levels of metals based on field screening results. Sufficient soil will be collected from the sample location to prepare a primary and duplicate sample from a single batch of soil. The soil sample will be homogenized with a trowel in a sample-dedicated one-gallon disposable pail or a decontaminated stainless steel mixing bowl, and then transferred to each sample container for both regular and duplicate sample analyses.

## Laboratory Quality Control

The analytical laboratory will perform Quality Control (QC). The QC will include project specific QC, method blank results, laboratory control spike, and matrix spike results.

- 1) Project Specific QC – No project specific QC has been requested by the CIWMB
- 2) Method Blank Results – A method blank is a laboratory-generated sample that assesses the degree to which laboratory operations and procedures cause false-positive analytical results for the CIWMB samples. The method blank results associated with the samples will be included with the analytical results.
- 3) Laboratory Control Spike – A Laboratory Control Spike (LCS) is a sample that is spiked with known analyte concentrations, and analyzed at approximately 10 percent of the sample load in order to establish method-specific control limits. The LCS results associated with CIWMB samples will be attached on the LCS and LCS Duplicated Analysis Report.
- 4) Matrix Spike Results – A matrix spike is a sample that is spiked with known analyte concentrations and analyzed at approximately 10 percent of the sample load in order to establish method-specific control limits. The matrix spike results associated with CIWMB samples will be attached on the Matrix Spike and Matrix Spike Duplicate Analysis Report.
- 5) Accuracy – Accuracy will be measured by percent recovery as defined by:

$$\% \text{ Recovery} = \frac{(\text{measured concentration}) \times 100}{(\text{actual concentration})}$$

# Documenting and Reporting

## Field Notes

A field logbook will be used to document all vital project and sample information. At a minimum, the following sample information will be recorded:

- Sample location and description
- Site or sample area sketch showing sample location and measured distances
- Sampler's name(s)
- Date and time of sample collection
- Designation of sample as composite or grab
- Type of sample (soil, sediment or water)
- Type of sampling equipment used
- Field instrument reading, if applicable
- Field observations and details related to analysis or integrity of samples (e.g., weather conditions, noticeable odors, colors, etc.)
- Preliminary sample descriptions
- Sample preservation
- Sample identification numbers and explanatory code
- Name of recipient laboratory

In addition to the sampling information, the following specific information will also be recorded in the logbook:

- Team members and their responsibilities
- Time of arrival and departure
- Deviations from the sampling plan
- Level of health and safety protection

## Photographs

Photographs will be taken at the sampling location and at surrounding areas. The photos will verify information entered in the field logbook. Each photo taken will be written in the logbook with the approximate time, date, and location.

## Labeling

All samples collected will be labeled in a clear and precise way for proper identification for tracking in the laboratory. Each sample will reference the sample date, the type of sample (S – surface; B – subsurface), and the sample point identification as shown on the pin flag.

## Chain-of-Custody

A chain-of-custody record will accompany all sample shipments. Shipped samples will have a custody seal placed across the lid of each sample container. All custody seals will be signed and dated.

## Packaging and Shipment

All sample containers will be placed in a strong-outside shipping container and will have the drain plug sealed, if applicable, to prevent melted ice from leaking out of the cooler. If ice is used to cool the samples, the ice will be packed in a double zip-lock bag. Special care will be provided to secure and prevent damage to the sample containers.

## Reporting

Once the analytical results are received and evaluated, CIWMB will prepare a sampling report describing the nature of the waste and discuss the analytical results. The CIWMB anticipates submitting the sampling report to the LEA within 30 days after receipt of the analytical results.

**FIGURE. 1**

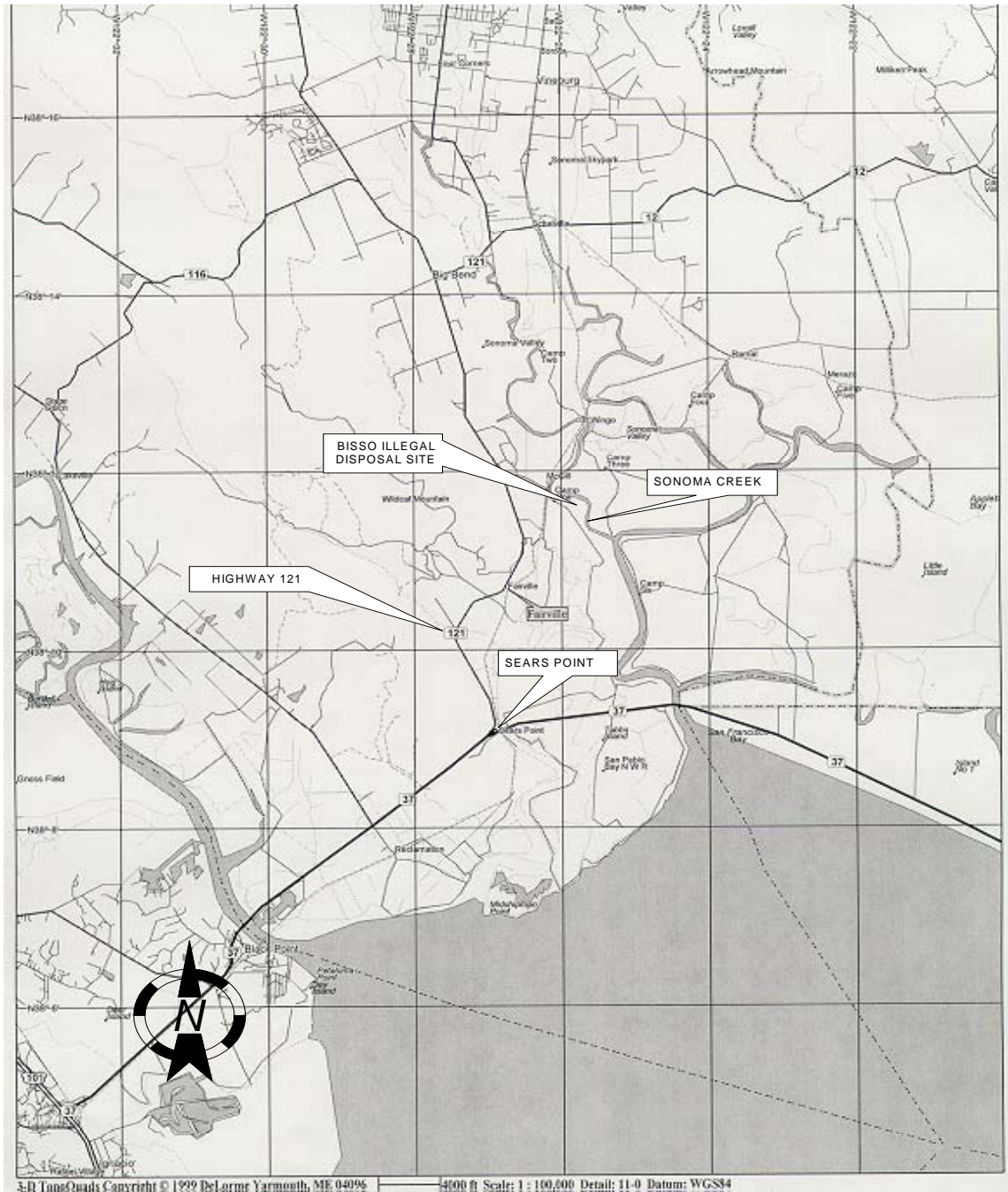


Figure. 2





**FIGURE 3**

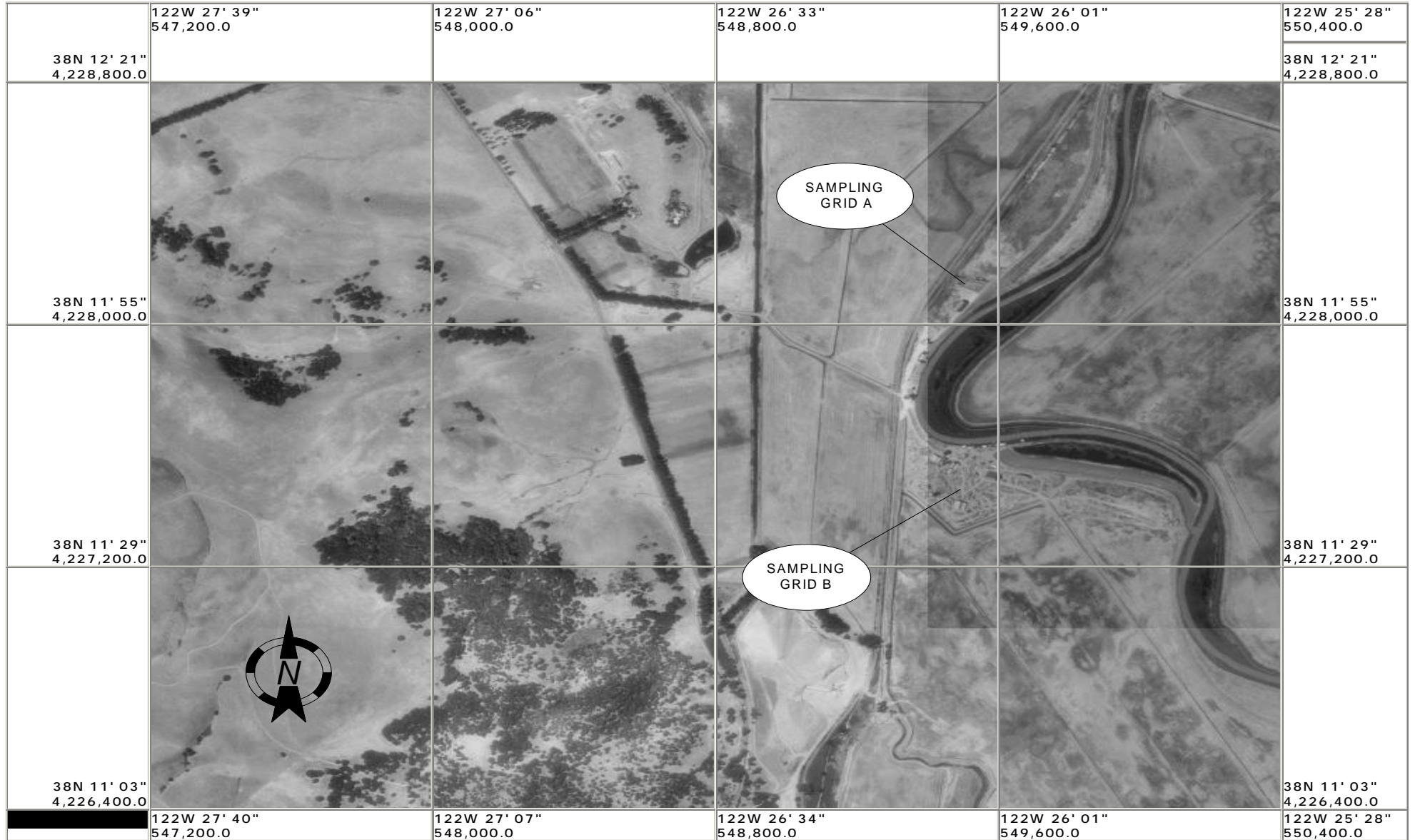




FIGURE. 4

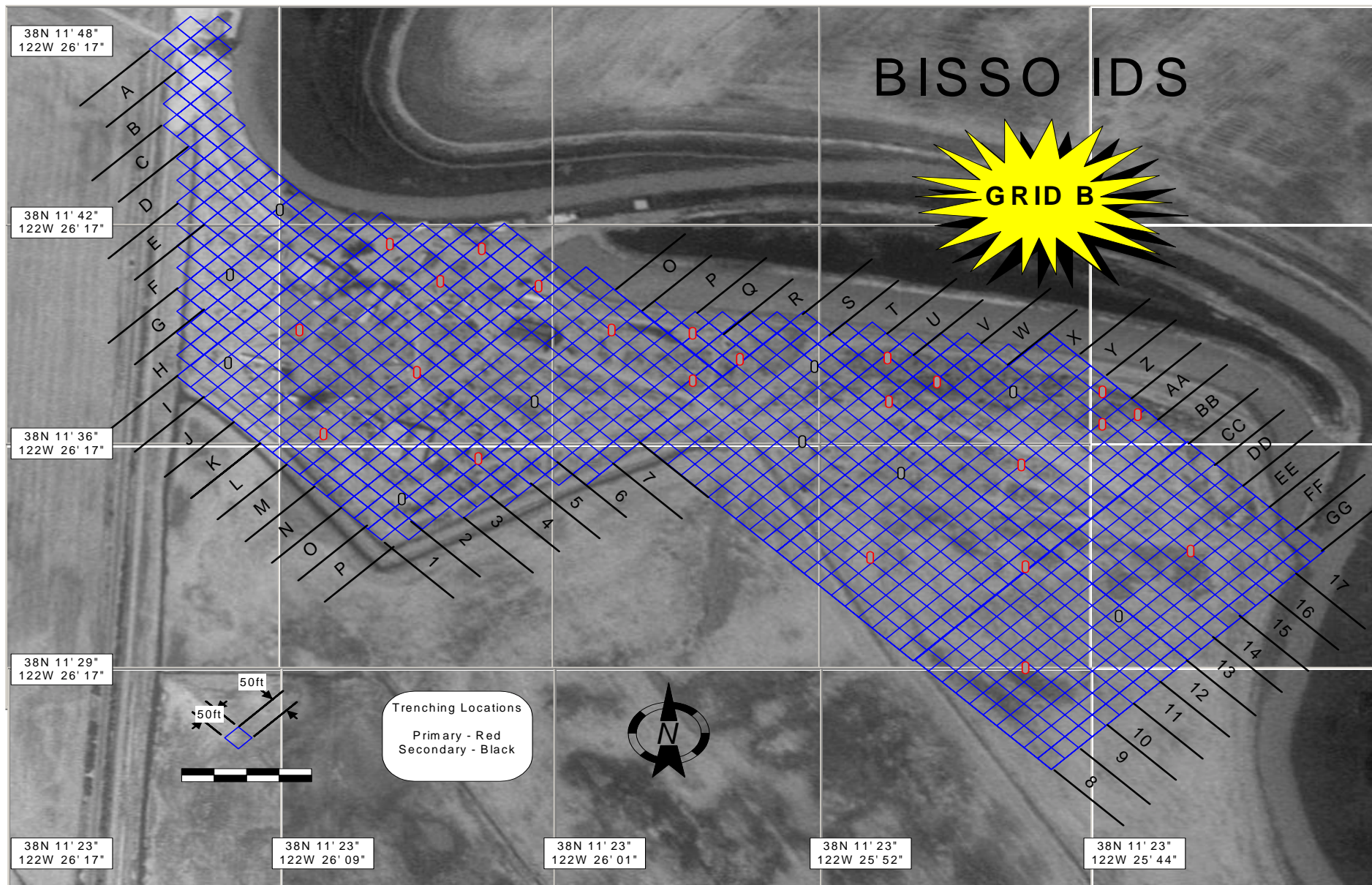




FIGURE. 5

